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ABSTRACT

Information literacy is the ability to access, evaluate, and use information from a variety of sources. This digest defines the information literate person and describes the evolution of the concept. Information literacy is examined in the context of existing practice; and the impact of technology on the storage and dissemination of data, resulting in the need for information literacy in telecommunications, is considered. Finally, information literacy is discussed in relationship to educational reform and to curriculum standards in mathematics, social studies, and science. (Contains 13 references.) (JLB)

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Information Literacy in an Information Society: An ERIC Digest

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ERIC DIGEST

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Information Literacy in an Information Society

Introduction

Information Literacy is the ability to access, evaluate, and use information from a variety of sources. As students prepare for the 21st century, traditional instruction in reading, writing, and mathematics need to be coupled with practice in communication, critical thinking, and problem solving skills (Costa, 1985).

Definition

An information literate person is one who:

- recognizes that accurate and complete information is the basis for intelligent decision making
- recognizes the need for information
- formulates questions based on information needs
- identifies potential sources of information
- develops successful search strategies
- accesses sources of information including computer-based and other technologies
- evaluates information
- organizes information for practical application
- integrates new information into an existing body of knowledge
- uses information in critical thinking and problem solving (Doyle, 1992)

Concept Evolution

A basic objective of education is for each student to learn how to identify needed information, locate and organize it, and present it in a clear and persuasive manner: (Hashim, 1986, p.17). In "Educating Students to Think: The Role of the School Library Media Program" (Mancall, Aaron, & Walker, 1986), the role of the school library media program in achieving this basic objective was described: (1) school library media programs need to be involved in helping students develop thinking skills; (2) school library media programs need to take into account current research on how children and adolescents process information and ideas; and (3) school library media programs need to assist with the development of an information skills program in all curricular areas.

In 1987, Kuhlthau advanced the concept of information literacy further when she included library skills and computer literacy in the definition. Kuhlthau's work pointed the way toward the integration of information literacy with curriculum, and presages the current development of the concept of information literacy with the library media center as the starting platform.

In 1988, the American Association of School Librarians (AASL), a branch of the American Library Association (ALA) published *Information Power* (ALA, 1988), national guidelines for school library media programs. The stated mission of *Information Power* is "to ensure that students and staff are effective users of ideas and information." This mission is accomplished by:

- providing intellectual and physical access to materials in all formats;
- providing instruction to foster competence and stimulate interest in reading, viewing, and using information and ideas; and
- working with other educators to design learning strategies to meet the needs of individual students (ALA, 1988).

The concept of information literacy was advanced still further when the first meeting of the National Forum in Information Literacy (NFIL) took place on November 9, 1989. NFIL is a coalition of over 60 organizations from business, government and education, all sharing an interest in and a concern for information literacy.

Information Literacy in Context

For an innovation to be successful, it needs to be integrated into the fabric of existing practice. Two major events driving information literacy into the arena of ideas are the SCANS Report, *What Work Requires of Schools* (1991) and *Goals 2000*, the national agenda for education. The SCANS Report outlined the economic shift in contemporary American society toward information services. It suggested and recommended skills that all Americans will need for entry level employment. These recommendations were phrased as outcome measures, and included both foundation skills and practical competencies. SCANS recommended a three-part skills foundation that included (1) basic skills, such as communication and understanding in reading, writing, and speaking; (2) thinking skills, such as problem solving, knowing how to learn, the generation of new ideas, setting goals, and choosing best alternatives; and (3) personal qualities, such as responsibility, self esteem, sociability, self-management, integrity and honesty (SCANS, 1991, p. xviii). There is a very close relationship between the full definition of information literacy and the recommendations of the SCANS Report and this congruency provides a powerful argument for advancing the concept of information literacy.

In 1975, the National Governors' Conference publicized a list of national educational goals, but little was done to implement them. In 1990, the goals were widely publicized by President Bush's administration. In 1994, President Clinton signed legislation authorizing *Goals 2000*, giving the national education goals legal status. The aim of *Goals 2000* was expressed as: "individually, to promote higher levels of individual student achievement, and collectively, to build a globally competitive American workforce" (*America 2000*, 1991, p.2). Six goals were proposed, covering issues ranging from the education of preschool children to adult literacy. In 1992, a panel of experts from the organizational memberships comprising the National Forum for Information Literacy, collaborated in a Delphi study that looked at the National Education Goals. One objective of this panel was for them to specify the outcome measures of information literacy that could be correlated with the means for achieving selected National Education Goals. Success in reaching this objective would result in listing the ways in which these education goals could be attained by applying the process of information literacy. Results of this research showed that the panel members reached consensus on 45 outcome measures for information literacy in the context of selected national education goals.

Both the SCANS Report and *Goals 2000* agree on much of what is needed. There should be a greater focus on teaching all students to become independent lifelong learners, to become critical thinkers, to

use a variety of technologies proficiently, and to work effectively with others.

Technology Impact

The process of information literacy requires not only the learning of a constellation of skills, but also a new way of thinking in order to derive meaning from learning. Technological storage and sharing of information has increased the availability of data tremendously. Much of this information is available only through telecommunications. Information literacy in telecommunications is achieved when learners know when to use online resources, know how to access information competently, know how to evaluate information as to accuracy and pertinence for each need, and know how to use this information to communicate effectively. Learners who are able to do this will have life long skills they will need in the Information Age.

Educational Reform

Much of what occurs in classrooms today was first conceived in the early part of the twentieth century, during the industrial period of American economic history. School curriculum was viewed as a means for passing down to the student all the skills necessary for effective citizenry. As America moves toward a post-industrial, or information society, critical thinking skills, problem-solving skills, and competence in information literacy in order to process information become increasingly more important for all students. Information literacy needs to develop in the context of school reform, restructuring, assessment, and national goals. Currently, the professional curricular organizations of major subject areas are engaged in the process of redefining their national standards.

Curriculum Standards

The National Council of Teachers of Mathematics (NCTM) paved the way for all national standards curriculum reform efforts. Curriculum and Evaluation Standards for School Mathematics views mathematics as "more than a collection of concepts and skills to be mastered; it includes methods of investigating and reasoning, means of communication, and notions of context. It involves the development of personal self-confidence" (NCTM, p. 5). Information literacy, as presented within the mathematics curriculum involves problem solving, the use of estimation, thinking strategies for basic facts, formulating and investigating questions from problem situations, use of computers and calculators, and other technologies. Assessment of mathematics also fits within the larger picture of information literacy because the focus of evaluation is on using information in meaningful ways to demonstrate understanding.

The National Council for Social Studies has been in the process of revising their standards, with several steps yet to be completed before publication of Curriculum Standards for the Social Studies. To understand and apply the concepts covered in the social studies curriculum, all students will need practice in information literacy skills. The standards state that "it is important that students be able to connect knowledge, skills, and values to action as they engage in social inquiry" (NCSS, 1993). Helping students acquire the skills to make good decisions is the basis of the new social studies standards, and information literacy is implicitly and explicitly intertwined.

The National Committee on Science Education Standards and Assessment (NCSESA) is in the process of producing *Science for All* (NRC, 1993), national science standards. The section on "The Nature of Science" includes "knowledge of the inquiry process, the ability to design and carry out an investigation, perspectives associated with critical thinking or habits of mind, and other positive attitudes usually associated with learning." This is an excellent application of information literacy using a hands-on approach appropriate to a particular subject matter.

Summary

As American society has shifted from an economy based on capital goods (industrial) to an economy based on services (information), there has been a corresponding shift in what is expected from American education. Knowing how to ask the right questions may be the single most important step in learning. The process that is conducted in order to find answers to the right questions leads to the point at which information becomes knowledge. Information Literacy--the ability to access, evaluate, and use information from a variety of sources--is central to all successful learning and by extension to all successful living.

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